least burdensome to the Commission and most reliable, in that the state commission may be better equipped to determine comparability on a localized level.

Finally, comment is sought on safeguards to ensure that carriers providing supported service to health care providers are responding to "bona fide" requests for "telecommunications services which are necessary for the provision of [rural] health care services in a state." Self certification by the rural health care provider would be the least burdensome approach and is unlikely to generate abuse of the system, once the Commission has determined the services "necessary to the provision of health care services." The Commission should make some allowance for different needs across states. Then the Commission should rely on a complaint system rather than imposing burdensome certification requirements a priori. The appropriate designee of any state certified health care provider that meets the rural definition established by the Commission should have authority to issue a "bona fide request" for the necessary services subject to the Act.

Eligibility for support is determined by reference to the statutory requirements. However, as the NPRM indicates, unlike Section 254(h)(1)(B), Section 254(h)(1)(A) appears to provide only for offsets, rather than direct reimbursement, although a policy rationale for such a difference is not clear. Thus, the same offset mechanism as is established pursuant to Section 254(h)(1)(B) should be applied simply for the sake of consistency and ease of administration. However, use of the same reimbursement mechanism should not be used since it is apparently prohibited.

VIII. ACCESS TO ADVANCED SERVICES

This section of the NPRM seeks comment with respect to policies to ensure access to advanced telecommunications and information services for elementary and secondary schools and classrooms, health care providers, and libraries. In many, if not most, areas, there is no need to require the subsidization of advanced capabilities or services since cable operators can -- and already are -- delivering such capabilities. The most important steps that the Commission could take to foster the deployment of advanced services is to ensure a rapid introduction of competition to all areas of the country, including (and especially) rural areas.

If cable operators are unable to provide those capabilities or services their introduction may be delayed. The Commission should make clear that, even in rural areas, where incumbents are protected from competition, cable operators can deliver advanced capabilities and, if those capabilities are included as "universal services," qualify to receive support. It would be grossly unfair to require companies precluded from competing to fund the infrastructure development of the companies with which they are not allowed to compete.

Finally, the Commission should encourage deployment of advanced telecommunications capability by use of the incentives provided in Section 706 of the 1996 Act.

IX. OTHER UNIVERSAL SERVICE SUPPORT MECHANISMS

The Commission asks parties to comment on other universal service support mechanisms, particularly the Carrier Common Line ("CCL") charge, in light of the statutory mandate to make such support explicit. We believe the CCL is more appropriately addressed in forthcoming proceedings addressing access charge reform and LEC interconnection requirements. In any event, interexchange carriers must be required to flow through access charge reductions to end users so that they receive the benefit of lower long distance rates.

X. ADMINISTRATION OF SUPPORT MECHANISMS

How the support mechanisms get administered is the key to a neutral universal service regime. As a general matter, we support the broadest possible participation by interested telecommunications providers in contributing to the fund. The NPRM seeks comment on the division between interstate and intrastate telecommunications carriers for the costs associated with universal service support. The simplest and most equitable approach is to impose the same levy on both, bearing in mind that companies not subject to separations could manipulate results if different rates are applied. Any other approach would be needlessly complex and expensive for many firms.[13] For this reason, contributions should be based on all revenues from telecommunications services, intrastate and interstate combined, as suggested in the NPRM.

Net, rather than gross, revenues from telecommunications services should be the basis for assessing contributions. Assessments based on gross revenues would disadvantage companies with substantial divergence between their net and gross telecommunications revenues. For example, assessments based on gross revenues would disadvantage new local exchange entrants at least in the short term. New entrants are likely to be paying a not insignificant sum to other telecommunications companies in the short term -- to the LECs for interconnection and resold services, to the CAPs for transport, and perhaps some monies to cellular or wireless carriers.

Other bases for assessments have significant disadvantages. Assessments based on per line or per minute charges can create economic distortions that can lead to inefficient outcomes as companies and end users try to lessen the burden of the funding mechanism. Similarly, the concept of "lines" in a digital environment is probably inappropriate. In sum, use of net revenues to assess USF contributions would best meet the test of the 1996 Act that a fund be nondiscriminatory, competitively and technologically neutral, specific and predictable.

---

[13] New entrants are not subject to the FCC's Accounting and Separations Rules and therefore generally will not track interstate and intrastate revenues separately.

XI. ADMINISTRATION OF THE UNIVERSAL SERVICE FUND

An independent entity should manage the collection and disbursement of subsidies. The independent administrator should be responsible for collection of carrier contributions; disbursement of funds; review and adjustment of the funding requirement; and resolution of disputes regarding the fund. The independent entity could be a pre-existing regulatory body or an entirely independent third party designated by regulators and preferably chosen through a request for proposals to ensure capabilities and efficiency. The same administrator could be designated to handle any competitive bidding process for schools, libraries and health care facilities, as well as any bidding process for rural, insular and high cost areas. In any event, it is essential that the administrator perform its duties in a competitively neutral manner, free of the control or influence of the incumbent local exchange carriers so that universal service obligations are not imposed in a manner that frustrates the development of competition.

CONCLUSION

For the reasons stated above, the Joint Board should adopt recommendations consistent with the proposals advanced in these comments.

Respectfully submitted,

Neal M. Goldberg

Daniel L. Brenner
Neal M. Goldberg
David L. Nicoll
1724 Massachusetts Avenue, N.W.
Washington, D.C. 20554

Counsel for the National Cable Television Association, Inc.

April 12, 1996

ATTACHMENT A

THE COST OF UNIVERSAL SERVICE

A Critical Assessment of the Benchmark Cost Model

Susan M. Baldwin
Lee L. Selwyn

April 1996

ECONOMICS AND TECHNOLOGY, INC.
ONE WASHINGTON MALL • BOSTON, MASSACHUSETTS 02108

Preface | THE COST OF UNIVERSAL SERVICE

The need for an objective measure of the cost of providing basic local exchange service has been identified by state and federal policy makers as they pursue the simultaneous goals of universal service and local competition. The recent enactment of the *Telecommunications Act of 1996* underscores the importance of establishing universal service funding mechanisms that allow the efficient development of competition in the local market while ensuring that all households have access to affordable telecommunications service. The Benchmark Cost Model represents a commendable effort by four telecommunications carriers to develop an objective measure of the cost of providing basic telecommunications services to households throughout the country. The BCM is a potentially valuable and timely tool that can assist in federal and state investigations of universal service. The BCM's potential to contribute to universal service funding decisions, however, depends upon the incorporation of several important modifications to the cost proxy model, which we present here.

This report was prepared by Economics and Technology, Inc. on behalf of the National Cable Television Association in order to provide a critical assessment of the strengths and weaknesses of the BCM, and, where possible, to offer affirmative recommendations for improvement. The project was conducted under the overall direction of Susan M. Baldwin and Dr. Lee L. Selwyn. Contributing to this work were Helen E. Golding, John T. McDermott, Michael J. DeWinter, Irena V. Tunkel, Scott C. Lundquist, and Susan M. Gately. The project also benefitted from the suggestions and ideas of Richard L. Cimerman, Director, State Telecommunications Policy, NCTA. The views in this report are those of ETI and do not necessarily reflect the views of the NCTA.

April 1996

Economics and Technology, Inc.
Boston, Massachusetts 02108 USA

Executive Summary | THE COST OF UNIVERSAL SERVICE

The prospect of real competition in local telephone service has the promise of bringing to this sector the kinds of benefits that have been realized in other competitively impacted telecommunications markets — lower prices, increased pace of technological innovation and diffusion, acceleration and expansion in the introduction of new products and services, and enhanced industry productivity and growth overall. As with the competitive initiatives that occurred in the customer premises equipment and long distance service markets in the 1970s and 1980s, incumbents have sought to slow the pace of competitive incursions into what had been single supplier markets by seeking to portray the disbanding of their monopolies as a threat to "universal service" — the goal of assuring maximum connectivity throughout the nation to the public switched telecommunications network. With respect to competition in the local exchange market, incumbent carriers have resurrected the "cream skimming" argument, claiming that new entrants would select only the lowest cost areas and markets to serve, leaving the incumbents — and their customers — with the prospect of escalating costs to maintain universal service availability. According to incumbent local exchange carriers, their traditional ability to offer below-cost service to customers in "high-cost" areas stems from their ability to fund such shortfalls internally, by charging above-cost rates to other customers and for certain high-margin services. With selective competitive entry, the LECs contend, these internal sources will be diminished, and alternate funding sources and mechanisms will be needed. Most prospective new entrants accept this possibility, but disagree that the ***magnitude*** of the universal service support that is needed will be anywhere near as extensive as that contended by the incumbents.

In an attempt to resolve this dispute as to the aggregate magnitude of universal service support that must be generated from other services, four telecommunications carriers — NYNEX, US West, MCI and Sprint — collaborated on the development of an economic model of the local exchange service industry. The goal of this effort was to definitively establish the actual costs and support levels needed to assure that no diminution of residential connectivity will occur, and to provide a basis for a formal funding mechanism that would assess *all* telecommunications providers for a fair share of the required universal service support. The results of this effort, known as the ***Benchmark Cost Model***, were submitted to the Federal Communications Commission on September 12, 1995. The BCM represents what may be the most comprehensive attempt to date to develop an objective national model of the cost of providing basic residential local exchange service. The BCM applies a "scorched node" philosophy in modelling the architecture of the local exchange carrier networks, in that it "deploys" a state-of-the-art telecommunications network assuming that all existing locations of network nodes — wire centers — are unchanged and that the locations and numbers of distribution nodes are established exogenously rather than optimally.[1] The BCM relies upon census data in order to determine the quantity of households that are to be served and the average household density within each of some 220,000 subregions known as Census Block Groups. The BCM is also based upon the simplifying assumption that all households are uniformly distributed within each of the CBGs. By design, the BCM is *not* intended to replicate a carrier's *actual* or *embedded* costs, but rather is intended to *simulate* the forward-looking cost of providing basic local exchange service based upon factors such as the terrain being served, population density, and equipment costs.

The BCM satisfies many of the essential attributes of a useful cost proxy model, and can be a valuable tool for achieving the universal service and local competition policy goals and mandates of the *Telecommunications Act of 1996*. The BCM relies upon publicly available data, generally incorporates reasonable network engineering assumptions, and models forward-looking costs. However, the BCM has several serious shortcomings that have the cumulative effect of substantially exaggerating the aggregate cost of basic local exchange service and of the universal service funding requirement. To be useful, the BCM must be corrected to eliminate these deficiencies and to generate more accurate and realistic results.

This report analyzes and corrects several of the key engineering/economic assumptions and input data upon which the BCM is constructed, and details the effect of these corrections on the model's results. Because replication of the entire national model was not feasible within the time frame available for this examination,[2] we selected one state — Washington — as the basis for our analysis. Washington ranks 17th in the number of CBGs, and includes a diverse and representative mix of natural terrain and population densities. Where correction of a defect was not feasible, we have attempted to identify the problem and to propose specific methodological remedies. Finally, the report discusses how the results of the BCM should be used in universal service funding deliberations at the state and federal levels as well as at the Joint Board. Among the report's key findings are these:

1. The BCM assigns one distribution node to each Census Block Group, and locates it at the geographic center of the CBG.

2. We estimate that each full national run of the BCM would require approximately 110 hours on a Pentium 100 MHz PC, plus an additional 20-30 hours of manual intervention. Our analysis of the data for Washington state by itself involved not less than 20 individual runs of the model, each one of which required roughly 2.5 hours of computer time.

The BCM overstates the average cost per residence line and overstates the universal service funding requirement:

- Corrections to the model reduce the national average monthly cost as determined by the BCM by at least 25%, and the national aggregate universal service funding requirement by at least $1.4-billion.[3] The results of rerunning the BCM to incorporate some but not all of ETI's corrections produced an average national cost of approximately $12.37 and a national USF requirement of approximately $749-million. If it had been possible for us to implement all of the corrections that we have identified, the actual results would have been even lower. These partial results do not yet reflect (1) a correction for the BCM's implausible assumption of uniform density of households within a CBG; (2) replacing the arbitrary and fixed copper/fiber crossover rule with an economic algorithm; and (3) assessing the need for universal service support at the wire center level rather than at the CBG level.

The existing sources of universal service support are not in imminent jeopardy:

- The numerous implicit existing sources of revenues that incumbents currently enjoy, combined with the various existing explicit sources of USF support, are not jeopardized by the entry of local competition. The largest such revenue source — yellow pages — has historically been used for this purpose, was assigned to the Bell Operating Companies in the MFJ expressly for this purpose, and is not affected by the entry of competing local exchange carriers. Therefore, policy makers can move forward in a timely but comprehensive manner to resolve the funding issues while still achieving the goals of promoting universal service and competition in the local market.

The BCM results should be considered together with an examination of various existing implicit and explicit sources of USF support

- The BCM does not purport to address many key questions relating to the establishment of an explicit universal service fund. The BCM is potentially a valuable tool that can contribute substantially to the USF debate, but the Joint Sponsors have neither raised nor answered a number of important and highly relevant questions. In addition to evaluating the BCM, this report also undertakes to address several of the more challenging questions that are key to ultimately sizing and establishing explicit universal service support programs.

3. For illustrative purposes, these data assume the "Cost Factor 2" and a support threshold of $30.

In configuring the model network, the BCM adopts an unduly expansive definition and scope of universal service that greatly exceeds the statutory requirements:

- The statutory goal of universal service refers to *connectivity* to the public network, which is satisfied by the provision of one primary access line per dwelling unit. However, the BCM does not confine its network design criteria to this standard, but instead models a network capable of supporting demand for multiple access lines as well as for certain premium services. The cost levels developed by the model thus overstate those that would be required to satisfy the minimal connectivity requirement. Although local telephone switching and distribution infrastructures are designed to satisfy more than the stand-alone demand for primary residential access lines, the model needs to confine itself to those costs that would be incurred solely to achieve the more limited universal service objective.

Certain key variables should be corrected before the BCM is adopted:

- Outdated and overstated switch costs exaggerate the potential funding requirement. The model should be corrected to reflect current switch costs, including the often substantial discounts that LECs routinely receive from the switch manufacturers.

- By determining the need for USF support on a CBG, rather than on a wire center, basis, the BCM fails to recognize many economies of scale and scope and thus significantly exaggerates funding requirements. Universal service costs and support requirements should be evaluated on a wire center basis.

- The fill factors in the model should be corrected to reflect the fact that the service that should be modelled — *single line* basic residence local exchange service — is a stable, predictable service that does not require the excess capacity needed by the LEC to offer other local exchange services (e.g., additional residential access lines and business service) that are characterized by more volatile demand. This correction reduces the amount of excess outside plant capacity and results in a lower cost per working subscriber line.

- The model's algorithm for determining when to deploy fiber rather than copper in the feeder plant is not economically based, and overstates the cost of feeder plant.

- The costs for the digital subscriber loop equipment do not reflect manufacturer discounts and should be reduced accordingly.

- The BCM computes a monthly per-line cost by multiplying the total investment per line by an expense factor, which is intended to reflect operating expenses and a return on investment. Expenses should be based upon forward-looking costs that reflect those expenses legitimately associated with the provision of primary residential exchange access service.

The BCM's approach for determining USF support is more appropriate than that used by the existing High Cost Fund:

- The need for and size of universal service support should be determined by comparing the cost of providing the primary residential access line in each wire center district with the price level that policy makers determine to be affordable. This approach differs from the existing high cost fund (which compares a carrier's average cost with the national average cost), and also differs from some state proposals that would compare the price of local exchange service in given areas with the statewide average price.

If properly corrected, the Benchmark Cost Model can support the objectives of the Telecommunications Act of 1996:

- The *Telecommunications Act of 1996* underscores the need to quantify the level of support required to ensure network connectivity for all households throughout the country, while developing support mechanisms that will enable competition to evolve efficiently in local markets.[4]

- Reliance upon embedded cost studies would not satisfy the important purpose of a cost proxy model, which is to provide an objective, *forward-looking* measure of the ongoing cost of supporting a correctly-specified universal service goal based upon efficient engineering and design.

- A cost proxy model, by reflecting objective measures of providing basic residential local exchange service, will allow the FCC and the state PUCs to size and to target assistance where it is needed, without unnecessarily burdening consumers and providers of basic local telecommunications service.

- The BCM, with the corrections identified in this report, should be adopted by federal and state policy makers as a valuable tool for addressing and resolving universal service funding issues.

4. *Telecommunications Act of 1996*, Pub. L. No. 104-104, 110 Stat. 56 (1996) ("*Telecommunications Act*"), Sec. 254.

Table of Contents | THE COST OF UNIVERSAL SERVICE

TABLES

1 THE ROLE OF THE BENCHMARK COST MODEL IN ADDRESSING UNIVERSAL SERVICE FUNDING REQUIREMENTS

1.1 Background

The Federal Communications Commission and a number of state regulatory bodies have identified the need for an objective measure of the cost of providing basic local exchange service, in order to properly gauge the need for and size of an explicit universal service funding mechanism.[1] The enactment of the *Telecommunications Act of 1996*[2] on February 1, 1996 further underscores the need to quantify the level of support required to ensure the provision of affordable basic service to all households throughout the country, while enabling competition to evolve efficiently in local markets.[3] Although there is a general consensus on the need for a reliable cost study of basic local exchange service, not surprisingly, there is substantial disagreement as to the specifics of any particular costing method or process. Nonetheless, despite the difficulties of reaching agreement on algorithms, cost inputs, and other attributes of a cost study, on September 12, 1995, four companies (including local exchange carriers and interexchange carriers) jointly submitted a cost proxy model known as the *Benchmark Cost Model* (BCM) to the FCC. MCI Communications Inc., NYNEX Corporation, Sprint/United Management Co., and US West, Inc. (the "Joint Sponsors") submitted a description of the BCM, the BCM itself, and the data inputs and results for six states to the FCC in CC Docket No. 80-286 (the so-called "High Cost proceeding"). On November 1, 1995, the Joint Sponsors made a second filing with data

1. Amendment of Part 36 of the Commission's Rules and Establishment of a Joint Board, CC Docket No. 80-286 ("CC Docket No. 80-286"), *Notice of Proposed Rulemaking and Notice of Inquiry* ("NPRM and NOI"), 10 FCC Rcd 12309 (1995); In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45, *Notice of Proposed Rulemaking and Order Establishing Joint Board*, March 8, 1996 ("NPRM"); see also, e.g., Vt. Stat. Ann. Tit. 30, Section 7501. *et. seq.*; Connecticut DPUC, Docket No. 95-06-17, *Application of the Southern New England Telephone for Approval to Offer Unbundled Loops, Ports and Associated Interconnection Arrangements*, Decision, December 20, 1995 ("Connecticut DPUC, Docket No. 95-06-17 Decision"), at 82.

2. *Telecommunications Act* of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996) ("*Telecommunications Act*").

3. *Id.*, Sec. 254.

and results for an additional 17 states, and on December 1, 1995, they made a filing with data for 49 states and the District of Columbia.[4] The initial filing was the subject of comments by participants in the FCC's High Cost proceeding.[5]

Subsequently the BCM has been introduced in several state universal service fund (USF) proceedings, where it has been the subject of varying levels of scrutiny.[6] The BCM is currently receiving particular attention in California, where Pacific Bell has developed its own "Cost Proxy Model" (CPM) and a diverse coalition of non-LEC parties is jointly supporting a variation of the BCM known as the "Hatfield Proxy Model."[7]

The BCM is by no means the sole cost proxy study that is being proposed to address universal service funding requirements. As noted, Pacific Bell has submitted its own cost study in the California USF proceeding, and in other jurisdictions, several local exchange carriers have been directed to or have already submitted cost studies of their own. One of the challenges for federal and state policy makers will be to determine the degree to which any given national USF cost model should reflect state-specific variations.

The purposes of the BCM, according to the Joint Sponsors, are to:

(1) Identify areas likely to require explicit high-cost assistance.

---

4. MCI Communications Inc., NYNEX Corporation, Sprint/United Management Co., and US West, Inc., *Benchmark Costing Model: A Joint Submission*, Copyright 1995, CC Docket No. 80-286 (Dec. 1, 1995) ("Joint Submission"). Data for Alaska are unavailable. The Joint Submission, filed December 1, 1995, did not include an updated version of the model. Therefore the model that has been submitted to the FCC and that has been made publicly available was the one current as of September 12, 1995.

5. CC Docket No. 80-286, NPRM and NOI, *op cit.*, footnote 1.

6. In New York, MCI submitted BCM results to the New York Public Service Commission in order to show, among other things, that New York Telephone Company's residential customers do not need a subsidy. New York PSC Case No. 94-C-0095, *Proceeding on Motion of the Commission to Examine Issues Related to the Continuing Provision of Universal Service and to Develop a Regulatory Framework for the Transition to Competition in the Local Exchange Market*, letter from Richard C. Fipphen, December 18, 1995. A universal service proceeding in Pennsylvania has also encompassed consideration of the BCM. Pennsylvania PUC, Docket No. I-00940035, *In Re Formal Investigation to Examine and Establish Updated Universal Service Principles and Policies for Telecommunications Services in the Commonwealth* ("Pennsylvania PUC, Universal Service Proceeding"), Direct Testimony of Dr. Robert Mercer, December 7, 1995 and Rebuttal Testimony of David Townsend, February 14, 1996. See also Pennsylvania PUC, Universal Service Proceeding, Interlocutory Order, Initiation of Oral Hearings Phase, Notice of Proposed Rulemaking to Establish a Universal Service Funding Mechanism, August 30, 1995.

7. California PUC, Consolidated R.95-01-020 and I.95-01-021, *Rulemaking and Investigation on the Commission's Own Motion into Universal Service and to Comply with the Mandates of Assembly Bill 3643 ("California PUC, Universal Service Proceeding")*. See Chapter 9, below for a more detailed discussion of this proceeding.

(2) Provide a benchmark cost range "assuming efficient engineering and design criteria and deployment of current state-of-the-art loop and switching technology, using the current national local exchange network topology."

(3) Provide a "benchmark measurement of the relative costs of serving customers residing in given areas, i.e., the CBGs."[8] According to the Sponsors, the purpose of the BCM is not to "define the actual cost of any telephone company, nor the embedded cost."

(4) Reflect only residential lines.[9] (According to the model's sponsors, the impact of excluding business lines is de minimis.)[10]

Reliance upon embedded cost studies would not satisfy the important purpose of a cost proxy model, which is to provide an objective, *forward-looking* measure of the ongoing cost of supporting the universal service goal, assuming efficient engineering and design. Embedded costs reflect *past* engineering and acquisition decisions that have either been made obsolete by fundamental changes in telecommunications technology, as well as capital investment initiatives that may have been driven more by the then-extant form of regulation[11] and by business goals of the individual LECs having little direct bearing upon achieving universal residential exchange service penetration.

A cost proxy model is well-suited to the complex task of unravelling existing implicit subsidies and quantifying the amount of explicit support that is required to move forward

8. "CBGs" are Census Block Groups, a demographic unit developed by the U.S. Census Bureau and used in the BCM. See Chapter 3 for a more detailed discussion of CBGs.

9. Although the Joint Sponsors indicate that business lines are not reflected, as is discussed in Chapters 3, 5, and 6, the BCM does *partially* reflect the presence of businesses.

10. Joint Submission, September 12, 1995, at 2-3.

11. Under rate of return regulation (RORR), LECs were confronted with strong financial incentives to overinvest in their capital asset base, because (a) they were largely insulated from financial and business risks by the regulatory process itself, and (b) aggregate earnings were themselves a function of aggregate net investment. See Averch, Harvey and Johnson, Leland, "Behavior of the Firm under Regulatory Constraint," *American Economic Review*, Volume 52, No. 5, 1962, at 1053-1069. One of the often articulated goals of "incentive regulation" was to reduce or to eliminate altogether this so-called "A-J Effect" by severing the link between revenues and costs. California PUC, Consolidated Dockets Nos. I.87-11-033 *et. al* and A.87-01-002, *Re Alternative Regulatory Frameworks for Local Exchange Carriers*, Decision 89-10-031, October 12, 1989, 33 CPUC 2d 43, at 44; and In the Matter of Policy and Rules Concerning Rates for Dominant Carriers, CC Docket No. 87-313, *Second Report and Order*, October 4, 1990, at 15. Since the future will be characterized by regulatory mechanisms in which the historic overcapitalization incentive is minimized (or perhaps eliminated altogether by the onset of competition), reliance upon embedded costs introduces a serious distortion and exaggeration of the forward-looking costs of providing universal service.

into the era of competition in the local market. Overstating the need for federal and state USF requirements would thwart the national goal of promoting competition. Understating the USF need could jeopardize the achievement of universal service.[12] A cost proxy model, by reflecting objective measures of providing basic residential local exchange service, will allow the FCC and the state public utilities commissions (PUCs) to size and to target assistance where it is needed, without unnecessarily burdening consumers and providers of basic local telecommunications service.

This report assesses the strengths and weaknesses of the BCM, discusses the compatibility of the BCM with the *Telecommunications Act of 1996*, and identifies certain corrections that should be made to the BCM before it is adopted as a tool in federal and state USF deliberations. The report examines key variables in the BCM (whether "hard-wired" or "user-specified") and major algorithms that merit the closest scrutiny by policy makers. Where feasible, this report also offers affirmative alternative approaches that, if incorporated into a revised cost proxy analysis, will result in a BCM that more accurately models the cost of satisfying the universal service goal.

It is also important to recognize that the BCM does not purport to address many key questions relating to the establishment of an explicit USF. The BCM is potentially a valuable tool that can contribute substantially to the USF debate, but the Joint Sponsors have neither raised nor answered some major relevant questions. The Joint Sponsors indicate further that they "support the use of the BCM for the analysis of the targeting of explicit high cost support." However, the Joint Sponsors also indicate that they "do not agree on its use for other purposes such as the setting of rates for telephone service."[13] This report not only evaluates the BCM, but also provides answers to some of the more challenging questions that are key to ultimately sizing and establishing explicit universal service support programs.

Although this report offers a critical examination of the BCM, the authors also recognize that no cost model will ever be "perfect." The challenge for the policy maker is to determine when a cost proxy model has become sufficiently robust that it is time to adopt the model and move forward. While it would be counterproductive to adopt a model

---

12. Throughout this report, the focus is on that aspect of universal service related to the provision of basic local exchange service to the household. Congress has also established a goal of deploying advanced telecommunications and information technology to schools, libraries, and hospitals. *Telecommunications Act*, see Sec. 254(h). It is not the intent of this report to address these important additional commitments reflected in the *Telecommunications Act*.

13. Joint Submission, at 1.

prematurely (i.e., before it satisfies appropriate standards),[14] it would also detract from other important aspects of the universal service debate should efforts to fine-tune any particular model become excessively prolonged.

The timing for implementation of a universal service funding mechanism has itself engendered debate and, in light of the up-front effort that has been required in order to create a reliable costing tool, should be put in the proper perspective. Some incumbent local exchange carriers have repeatedly claimed in state USF proceedings that local competition will jeopardize universal service.[15] They therefore argue that a universal service funding mechanism needs to be in place from the very outset, as a threshold condition for the authorization of *any* competition at the local level. Of course, any impact on universal service that may result from competition, to the extent that it occurs at all, will not happen precipitously or on a particularly large scale during the initial ramp-up of facilities-based local providers, and certainly will not occur any sooner than the time it will take for a careful and deliberate consideration of the size and mechanisms of universal service funding. Indeed, the incumbent LECs' "scare tactics" must be seen as both transparent and disingenuous: Their real purpose is to protect their incumbency for as long as possible; the professed concerns with universal service are merely a device to that end. The numerous implicit sources of revenues that incumbents enjoy, combined with the various existing explicit sources of USF support, are not in imminent jeopardy. Therefore, policy makers can move forward in a timely but comprehensive manner to resolve the funding issues while still achieving the goals of promoting universal service and competition in the local market.

1.2 General overview of the status of regulatory USF proceedings

While the Act put a definitive stamp of approval on the public policy of competition in local exchange service, it followed, rather than led, the trend toward authorizing local competition and addressing the many important policy issues that attend that decision. Many states have included universal service as a priority issue, either within the context of a broad-spectrum competition docket or in a proceeding focused specifically on universal

14. See Section 2, below, for a more detailed discussion of the way in which any particular cost proxy model should be evaluated.

15. Tennessee PSC, Docket No. 95-02499, *Universal Service Proceeding* ("Tennessee PSC, Universal Service Proceeding"), Testimony of Peter F. Martin (BellSouth), October 20, 1995, at 13; Massachusetts D.P.U. 94-185, *Local Exchange Competition Proceeding*, Direct Testimony of Paula Brown, May 19, 1995, at 23-24.